

Amendment of the claims

1-31. (Canceled)

32. (Currently Amended) A method for modifying the biological and/or physicochemical properties of a biological element, said method comprising reacting said biological element with a synthetic hydrophilic multivalent polymer comprising:

- (i) a polymer backbone based upon monomer units selected from the group consisting of N-2-hydroxypropylmethacrylamide (HPMA), N-(2-Hydroxy ethyl)-L-Glutamine (HEG), ethyleneglycol-oligopeptide and dextran monomers; and
- (ii) multiple reactive groups,

wherein the biological element is linked to the polymer by a plurality of linkages.

33. (Previously presented) A method as claimed in claim 32 wherein the biological element is an infectious agent that normally targets and interacts with particular sites or receptors in a host, wherein the polymer modification has the effect of modifying the infectivity of the biological element and/or retargeting it to a new or different site or receptor in the host.

34. (Previously presented) A method as claimed in claim 33 wherein the infectious agent is a viral vector containing therapeutic genetic material.

35. (Previously presented) A method as claimed in claim 33 wherein retargeting is achieved by incorporating a specific targeting group or moiety in the multivalent polymer and by ensuring that after modification the biological element is sufficiently coated with the polymer as to inhibit targeting and interaction with the original target site or receptor of the host.

36. (Previously presented) A method as claimed in claim 32 which has the effect of modifying the solubility or partition co-efficient characteristics of the biological element in non-aqueous media by virtue of a hydrophobic group incorporated in the polymer.

37. (Currently Amended) A polymer modified biological element in which the biological element is covalently linked to a synthetic hydrophilic multivalent polymer comprising:

- (i) a polymer backbone based upon monomer units selected from the group consisting of N-2-hydroxypropylmethacrylamide (HPMA), N-(2-Hydroxy ethyl)-L-Glutamine (HEG), ethyleneglycol-oligopeptide and dextran monomers; and
- (ii) multiple reactive groups,

wherein said polymer is linked to the biological element by at least two covalent linkages.

38. (Previously presented) A polymer modified biological element according to claim 37 wherein the biological element includes therapeutic genetic material.

39. (Previously presented) A polymer modified biological element according to claim 37 wherein the number of linkages between the polymer and the biological element is greater than three.

40. (Previously presented) A polymer modified biological element according to claim 37 wherein the linkage of said polymer to the biological element and modification of the latter results in the inhibition of the ability of the biological element to interact in a host biological system with other molecules with which it would otherwise normally interact or in the inhibition of the ability of the biological element to bind to sites or receptors to which it would otherwise normally bind.

41. (Canceled)

42. (Previously presented) A polymer modified biological element according to claim 37 wherein each of the reactive groups is connected to the polymer backbone either directly or via a spacer group.

43. (Canceled)

44. (Previously presented) A polymer modified biological element according to claim 37 wherein the polymer and/or the linkages between it and the biological element are hydrolytically or enzymatically degradable.

45. (Previously presented) A polymer modified biological element according to claim 37 wherein the polymer used to modify the biological element is cross-linked such that it forms a hydrogel.

46. (Previously presented) A polymer modified biological element according to claim 37 wherein a biologically active agent is coupled to or included in the polymer.

47. (Previously presented) A polymer modified biological element according to claim 46 wherein the biologically active agent is one or more of the following: a growth factor or cytokine, a sugar, a hormone, a lipid, a phospholipid, a fat, an apolipoprotein, a cell adhesion promoter, an enzyme, a toxin, a peptide, a glycoprotein, a serum protein, a vitamin, a mineral, and an antibody recognizing receptor.

48. (Previously presented) A polymer modified biological element according to claim 46 wherein the biological active agent is an antibody or antibody fragment.

49. (Previously presented) A polymer modified biological element according to claim 48 wherein said antibody and antibody fragments are monoclonal.

50. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the biological element is a virus or other infective micro-organism and wherein the polymer is effective to bring about substantially a complete loss of the infectivity of the unmodified biological element.

51. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the modification of the biological element has the effect of retargeting the biological element to different receptors in a biological host.

52. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the modification of the biological element has the effect of modifying the solubility and dispersal and stability characteristics of the biological element within a non-aqueous environment.

53. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the biological element is a micro-organism having oil degradative activity.

54. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the polymer incorporates an oleyl or a hydrophobic group.

55. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the biological element is a baculovirus particle.

56. (Previously presented) A process for the preparation of a polymer modified biological element as defined in claim 37 which process comprises combining a biological element with a polymer.

57. (Previously presented) A polymer modified biological element obtainable by the process according to claim 56.

58-60. (Canceled)

61. (Previously presented) A composition comprising a polymer modified biological element as defined in claim 37 in association with a carrier.

62. (Previously presented) A composition as claimed in claim 61 wherein the carrier is a pharmaceutically acceptable additive, diluent or excipients.

63. (Previously presented) A method of treatment of oil pollutants comprising contacting a polymer modified biological element as claimed in claim 53 with said oil pollutants.

64. (Previously presented) A method of treating a pathogen comprising contacting said pathogen with a polymer modified biological element as claimed in claim 37, wherein said biological element is a biological pesticide.

65. (Canceled)

66. (Previously presented) A polymer modified biological element as claimed in claim 37 wherein the biological element is an adenovirus.

67. (Currently amended) A polymer modified biological element formed by a method comprising reacting said biological element with in which the biological element is covalently linked to a synthetic hydrophilic multivalent polymer having multiple reactive groups wherein the biological element is linked to the polymer by a plurality of linkages comprising:

- (i) a polymer backbone based upon monomer units selected from the group consisting of N-2-hydroxypropylmethacrylamide (HPMA), N-(2-Hydroxy ethyl)-L-Glutamine (HEG), ethyleneglycol-oligopeptide and dextran monomers; and
- (ii) multiple reactive groups,
wherein the biological element is linked to the polymer by a plurality of linkages, and
wherein the biological element is an infectious agent that normally targets and interacts with particular sites or receptors in a host, wherein the polymer modification has the effect of modifying the infectivity of the biological element and/or retargeting it to a new or different site or receptor in the host, wherein retargeting is achieved by incorporating a specific targeting group or moiety in the multivalent polymer and by ensuring that after modification the biological element is sufficiently coated with the polymer as to inhibit targeting and interaction with the original target site or receptor of the host.

68. (Currently amended) A method for modifying the biological and/or physicochemical properties of a biological element, said method comprising reacting said biological element with a synthetic hydrophilic multivalent polymer having multiple reactive groups wherein the biological element is linked to the polymer by a plurality of linkages comprising:

- (i) a polymer backbone based upon monomer units selected from the group consisting of N-2-hydroxypropylmethacrylamide (HPMA), N-(2-Hydroxy ethyl)-L-Glutamine (HEG), ethyleneglycol-oligopeptide and dextran monomers; and
- (ii) multiple reactive groups,

wherein the biological element is linked to the polymer by a plurality of linkages, and wherein the biological element is an infectious agent ~~hat~~ that normally targets and interacts with particular sites or receptors in a host, wherein the polymer modification has the effect of modifying the infectivity of the biological element and/or retargeting it to a new or different site or receptor in the host, wherein retargeting is achieved by incorporating a specific targeting group or moiety in the multivalent polymer and by ensuring that after modification the biological element is sufficiently coated with the polymer as to inhibit targeting and interaction with the original target site or receptor of the host.

69. (Previously presented) A method of delivering a biological element to the cell of an individual comprising administering to the individual a polymer modified form of said biological element wherein said polymer modified biological element is as claimed in claim 37.

70. (Previously presented) A method of delivering a biological element to the cell of an individual comprising administering to the individual a polymer modified form of said biological element wherein said polymer modified biological element is as claimed in claim 67.

71. (Previously presented) A pharmaceutical composition comprising a polymer modified biological element as claimed in claim 37, and a physiologically acceptable carrier or diluent.

72. (Previously presented) A pharmaceutical composition comprising a polymer modified biological element as claimed in claim 67, and a physiologically acceptable carrier or diluent.